July 17, 1995
GFK-0852A

IMPORTANT PRODUCT INFORMATION

READ THIS INFORMATION FIRST

Product: **PANELWARE™ MMI System**

IC641SWP950 PANELWARE Configuration Software Version 1.8
IC750CTR200 C200 Basic Controller
IC750CTR400 C400 Genius™ Controller
IC750CFL840 8x40 Graphic CFL Display
IC750KBL160 16 Key / 16 LED Block
IC750KBL400 Numeric Key Block
IC750KBL840 8 Key / 4 LED Block
IC750KBL440 4 Key / 4 LED Block
IC750KBL910 Emergency Stop Block
IC750KBL920 Keyswitch Block
IC750KBL930 Start / Stop Block

The PANELWARE MMI System consists of a line of modular components, including controllers, displays and key blocks, which allow easy custom hardware configurations. This IPI document covers all the PANELWARE products listed above.

The PANELWARE Configuration software is used to create projects for execution on one of the GE Fanuc PANELWARE MMI Controllers.

Software Id: Version 1.8 (IC641SWP950B)

Replaces Version 1.71 (IC641SWP950A)

Applicable Documents

PANELWARE™ Hardware Installation User's Manual, GFK-0848A

PANELWARE™ Configuration Software Reference Manual, GFK-0849A

PANELWARE™ Application Manual for GE Fanuc Series 90 Protocol (SNP), GFK-0850A

PANELWARE™ Application Manual for GE Fanuc Genius Protocol, GFK-1115

Special Operational Notes

Installation

The *PANELWARE Configuration Software Reference Manual* (GFK-0849) should be consulted for instructions for installing the PANELWARE configuration software on a personal computer.

Release Notes

After installing the PANELWARE Configuration software, two "read me" files will be found in the <target path> (e.g., C:\PW) subdirectory of your hard disk: README.US (English version) and README.GR (German version). You are encouraged to read the README file for additional notes and information concerning this release of the Configuration software. Note that some of the products described in the README files may not be released. Please do not rely on any references made to these units. Your local GE Fanuc distributor will inform you of any changes.

Upgrading to V1.8

In order to use the version 1.8 PANELWARE Configuration Software with a project created using an earlier version of software, three things must be done.

1. The V1.8 software must be installed on your computer.
2. You must upgrade your Panel Controller's operating system flash memory with the V1.8 operating system files that are shipped as part of V1.8 PANELWARE Configuration Software package. (Refer to *the PANELWARE Configuration Software Reference Manual* for details.)
3. You must open your project, allow it to be converted to the new V1.8 format when so prompted by the software, compile it and download it to your (upgraded) Panel Controller.

GE Fanuc PLCs

The following GE Fanuc PLCs are supported by the *Series 90 protocol (SNP) driver*: Series 90-70, Series 90-30, Series 90-20, and Series 90 Micro.

The following GE Fanuc PLCs are supported by the *Genius protocol driver*: Series 90-70, Series 90-30, Series Six, and Series Five.

90-70 CPU Firmware

In order to use the SNP *datagram* Data Interface Service with a 90-70 PLC, the 90-70 CPU firmware must be version 4.02 or later. For earlier firmware versions, you must select the *read_write* Data Interface Service.

90-30 CPU Firmware

In order to use the SNP *datagram* Data Interface Service with a 90-30 PLC, the 90-30 CPU firmware must be version 3.02 or later. For earlier firmware versions, you must select the *read_write* Data Interface Service.

Alarm Bypassing

When the PANELWARE Controller is power cycled, all alarm bypassing is automatically canceled.

SNP Privilege Level

When connecting PANELWARE to the CPU port of either a 90-70 or a 90-30 PLC, the SNP protocol parameter setting for Change Privilege Level must be set to *enable* regardless of whether or not passwords are used in the PLC. If set to *disable*, the Panel Controller may:

a) be unable to establish communications with the PLC or

b) lose communications with the PLC when attempting to write data to the PLC.

LEDs

Although up to 99 LEDs can be defined per picture, only 48 can be simultaneously lit at runtime due to limitations that are enforced by the hardware on current.

Graphic CFL Display

When power is first applied to an 8x40 graphic CFL display (IC750CFL840) that has been unpowered for 15 minutes or more at 0°C, the display will appear unusually dim. The display will still be readable. After 2–3 minutes with power applied, the backlight will supply normal brilliance to the display.

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Switch Performance Switches used in the electronic keyblocks have a minimum rating of 1 million operations.

Keyblock Handling Use of a ground cuff and a grounded floor surface is recommended when handling the following PANELWARE electronic key blocks:

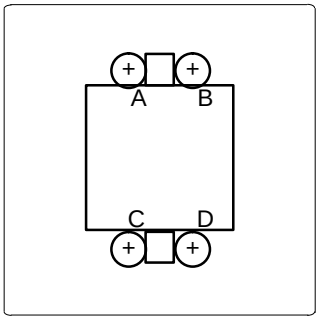
IC750KBL160	16 Key / 16 LED Block
IC750KBL400	Numeric Key Block
IC750KBL840	8 Key / 4 LED Block
IC750KLB440	4 Key / 4 LED Block

Special Keyblocks A low-profile cable connector is required when one of the following special keyblocks is installed directly over the serial port connections of the Panel Controller. These keyblocks are deeper than standard keyblocks:

IC750KBL910 Emergency Stop Block
IC750KBL920 Keyswitch Block
IC750KBL930 Start / Stop Block

The cables provided as part of IC640HWP950 do not have these low profile connectors. It is suggested that special keyblocks be mounted on the side of the Controller opposite the side containing the serial port connections; otherwise you will need to provide your own cable(s) for proper Panel installation.

Emergency Stop Block On this block (IC750KBL910), the two contacts (A & B and C & D) are normally closed when the E-Stop switch is disengaged (released) and open when the switch is engaged (pressed). Twist the knurled knob to disengage the E-stop switch.



Keyswitch Block Keyswitch and ON / OFF (IC750KBL920)

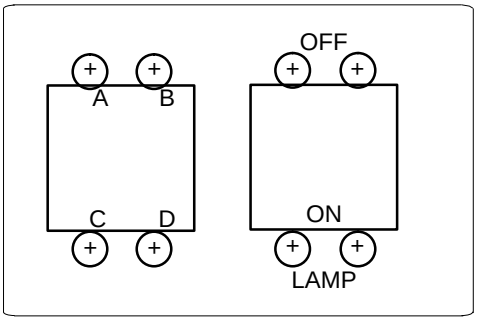
WARNING

Revision B (and later) Keyswitch Blocks are not interchangeable with revision A Keyswitch Blocks. Because the type of OFF switch has been changed, the two versions operate differently. When you replace an A version of the module with a B version (or vice-versa), you must also modify your system configuration accordingly before power up.

In **revision B** of the Keyswitch Block, the OFF contacts are normally closed and open momentarily when the OFF switch is pressed.

In **revision A** of the Keyswitch Block, the OFF contacts are normally open and close momentarily when the OFF switch is pressed.

In both versions of the module: The LAMP terminals require the application of 24-30VDC (non-polarized) to light the indicator. With the keyswitch in the vertical position, A & B are closed and C & D are open. With the keyswitch in the horizontal position, A & B are open and C & D are closed. The ON contacts are normally open. These contacts momentarily close when the ON switch is pressed.



Specifications for Keyswitch Block Contacts

	Revision A	**Revision B**
Keyswitch contacts 10 Amps 220 VAC; 7.5 Amps @ 380 VAC	1-NORMALLY CLOSED, 1-NORMALLY OPEN	1-NORMALLY CLOSED, 1-NORMALLY OPEN
ON switch contacts 10 Amps 220 VAC; 7.5 Amps @ 380 VAC	NORMALLY OPEN	NORMALLY OPEN
OFF switch contacts 10 Amps 220 VAC; 7.5 Amps @ 380 VAC	NORMALLY OPEN	NORMALLY CLOSED

New Features and Functionality in this Upgrade (V1.8)

Genius Protocol The GE Fanuc Genius protocol is supported for the new C400 Panel Controller (only). Both datagrams and global data are supported for the GE Fanuc Series 90-70, Series 90-30, Series Six and Series Five PLCs.

Multidrop SNP Multiple SNP connections may now be defined for a single project. Multidrop cable diagrams have now been added to the SNP Protocol Manual.

Project Importing Complete projects, or portions of projects (e.g., pictures), may be imported into a new or existing project. This feature allows the reuse of project components for subsequent applications. In addition, the variable assignment table for a project may be imported or exported via an ASCII file.

Start from Teach Mode A project may now be configured to automatically start executing immediately following its download (Panel in Teach Mode). In addition, a new command has been added to force the Panel to begin executing a project while the Mode switch is still in the Teach position. These enhancements allow you to cyclically change and execute a project without changing the position of the Mode switch or pressing the reset button on the Panel Controller.

Word Unsigned Scaling WORD Unsigned fields may now have scaling to engineering units applied to them.

Long Signed Fields Both input and output LONG Signed fields may be created. Previously only LONG Unsigned fields were available.

LEDs, Keys, Fields In versions of the software previous to V1.8, the total number of LED Control from PLC, Function Keys and Fields which could be defined for a single picture was 53. Beginning with version 1.8, the limits for each of these three elements are independent with the new maximums per picture of 99 LED Control from PLC, 99 key functions and 64 fields.

SNP Parameters The SNP protocol parameters setup screen has now been split into two separate screens. Parameters which apply to only a single connection may be specified differently for each connection. Parameters which apply globally to the SNP network itself (e.g., baud rate) may be specified on a separate single screen which applies to all connections.

Error Picture A function key may now be defined for the Error picture that allows you to return to the picture displayed just prior to the error picture *without actually correcting the error condition.* Any data being displayed from a lost connection will be denoted with "_" characters in the respective data fields.

Mask Text Enhanced Mask text size may now be controlled for all supported graphic displays. Also, the entire character set supported by each display may now be utilized (previously only character codes 32 through 127 were supported; now 128 through 255 are also supported).

Battery Low Alarm A new system alarm has been added to indicate a low voltage status from the Panel Controller's battery.

Problems Resolved by this Upgrade (V1.8)

Momentary Keys When displaying on a Panel display a picture which did *not* contain a momentary key, the typical delay between seeing the static text making up the picture and the first data snapshot was 1–2 seconds. Each momentary key defined for a picture added an additional 200ms delay. For a picture containing many momentary keys, the additional delay became excessive. For version 1.8, momentary keys do not add any additional delay to the standard picture "start up" time.

NOTE: In version 1.71, if a momentary key appeared on a picture, its associated PLC reference address was automatically set to 0 (OFF) each time the picture was displayed. This is no longer done.

Max Alarms in Group In previous versions of the Configuration software, if all possible 128 alarms of a group were defined, the first 8 alarms in the next group were not scanned as expected. This problem has been corrected in version 1.8; now all 128 alarms can be defined for a group.

Filter Functions The filter function options for the ALARM and ALARM HISTORY LIST ENTRY output fields are now fully implemented in version 1.8.

Bypass Image When the "Transmit Bypass Image" option is activated on the Project Definition form, the bypass image will now actually be sent to the PLC.

Change Pictures If "Allow Picture Change from PLC" was enabled, and a picture number was sent to the Panel which was greater than the highest numbered picture in the project, the Panel would stop executing the project and display "Fatal SysError 9100" on the Panel display. Illegal picture change requests are now ignored by the Panel (a 255 is still written back to the picture change register to clear it, however).

Undefined Keys If, while entering characters into an active Input Password field, you pressed a key that had not been defined in either the numeric or the alphanumeric key table, project execution terminated with "SysError #11500" output on the Panel display. Undefined keys are now properly ignored.

Change Pict. Tagname If a project was created with "Allow Picture Change from PLC" enabled, and the tagname specified for the picture change variable was used in another field in the project, executing the project on a Panel resulted in immediate execution termination and "SysError #16010" appeared on the Panel display. This no longer occurs.

Output Text Fields When two or more Output Text Advanced fields appeared on a picture and each of them referenced the same tagname, one of the two fields could "freeze" its display and cease updating until you left the picture and then returned. This has now been fixed.

Historical Alarm Lists When attempting to scroll through a list formed by multiple Historical Alarm List Entry fields, project execution could cease with either "SysError 7514" or "SysError 9100" appearing on the Panel display. Historical Alarm Lists now function as expected.

Restrictions and Open Problems

SETUP Program The PANELWARE Configuration Software SETUP installation program incorrectly identifies i486-based computers as being i386-based. This erroneous information does not affect the functioning of the installation software.

SNP T4 Timer The SNP protocol setup screen provides a default 50ms value for the **T4 Break Processing Time**. This value should be set to at least 65ms to avoid intermittent communications failures.

Series Six Genius The Series Six PLC memory type "O" (discrete outputs) must be specified in a Genius connection variable table (VAT) entry by the letter "Q".

Series Five Genius The Series Five PLC memory types "O","O1+", "O2+", "O1–" and "O2–" (discrete outputs) must be specified in a Genius connection variable table (VAT) entry by the designations "Q","Q1+", "Q2+", "Q1–" and "Q2–", respectively.

C400 Panel Controller In very rare situations, a C400 Genius Panel Controller may not be able to automatically resume communications with any device on the Genius bus following a power cycle of either the attached device with which it is actively communicating, or following a power cycle of the C400 Controller itself. Power cycling or resetting the C400 will correct the problem.

SNP Cable Diagram In the *PANELWARE™ Application Manual for GE Fanuc Series 90 Protocol (SNP),* GFK-0850, Figure A-1, Point-to-Point Cable Connections for C200 Controller to CPU Series 90 (RS-422) incorrectly identifies the CTS(B') pin as 18 rather than the correct value of 8. (This error should be readily evident because the CPU connector contains only 15 pins.)

i286-based PCs On some older 286-based computers, the Configuration software will lock up after displaying the copyright screen.